AMENDMENTS TO THE CLAIMS

Please cancel claims 11 and 19 and amend claims 1, 7, 9, 10, 12, 17 and 18 as shown below. This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A watermark insertion apparatus comprising:

a watermark ~~insertion~~ generation section that ~~inserts~~ generates in a program watermark that differs for each of a plurality of distribution destinations of said program; ~~and~~

~~a code insertion section that inserts in said program per each of the plurality of distribution destinations a watermark verification code that prevents said program from operating correctly when said watermark is tampered with, wherein:~~

~~the watermark verification code inserted in said program distributed to the plurality of distribution destinations, is made identical regardless of said distribution destinations;~~

~~for said program to be made to operate correctly, said watermark verification code is necessary;~~

~~variables are assigned functions of values of the watermark, where the sum of said functions of said values is zero; and~~

~~the sum of said variables is added, as watermark verification code, in a decision statement of the program so that the result of the decision statement of the program is not affected if the watermark and the watermark verification code have not been tampered, but is affected otherwise~~

a first assignment expression embedding section that defines a plurality of functions that output a plurality of predetermined constants, respectively, from said watermark and embeds in said program a plurality of expressions that assign said plurality of functions to a plurality of variables, respectively;

a code insertion section that sets as a watermark verification code a decision statement of a conditional branch for deciding whether each of said plurality of variables and each of said plurality of

constants are equal, and halting said program if each of said plurality of variables and each of said plurality of constants are not equal, and that inserts in said program said watermark verification code which, if said watermark or said watermark verification code is tampered, does not operate said program properly and which comprises same content regardless of said plurality of distribution destinations;

a second assignment expression embedding section that generates another function that outputs another constant such that a sum of said another constant and a sum of said plurality of constants is zero and embeds in said program an expression that assigns said another function to another variable; and

an addition section that generates and inserts as a verification code a code that adds a total value of said another variable and said sum of said plurality of variables to said decision statement of said conditional branching in said program such that said decision statement of said program of a decision branch is not affected if said watermark and watermark verification code are not tampered.

2.   (original) The watermark insertion apparatus according to claim 1, wherein said watermark is generated from ID information that uniquely determines a program distribution destination.

3.   (original) The watermark insertion apparatus according to claim 1, further comprising a function insertion section that defines a function that outputs a predetermined constant from said watermark and inserts an expression that assigns said function to a variable in said program; wherein said watermark verification code is a conditional branch that determines whether said variable and said constant are equal, and when said variable and said constant are not equal halts said program; and said watermark verification code is made identical regardless of said distribution destination.

4.   (original) The watermark insertion apparatus according to claim 1, wherein said watermark verification code is necessary for said program to be made to operate correctly.

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5.   (original) The watermark insertion apparatus according to claim 4, wherein said watermark verification code has inserted a calculation expression that does not affect a decision statement of a decision branch generated from said watermark in said decision branch extracted from said program.

6.   (original) A watermark extraction apparatus comprising:

a program input section that inputs a program in which the watermark insertion apparatus **according to claim 1** has inserted said watermark and said watermark verification code; and

a watermark detection section that extracts said watermark from said program and generates ID information that uniquely identifies said distribution destination based on said watermark;

wherein a distribution destination is identified based on generated said ID information.

7.   (currently amended) A program illegal distribution prevention system comprising:

the a watermark insertion apparatus according to claim 1; and

a watermark extraction apparatus, wherein said watermark insertion apparatus comprises:

a watermark generation section that generates watermark that differs for each of a plurality of distribution destinations of a program;

a first assignment expression embedding section that defines a plurality of functions that output a plurality of predetermined constants, respectively, from said watermark and embeds in said program a plurality of expressions that assign said plurality of functions to a plurality of variables, respectively;

a code insertion section that sets as a watermark verification code a decision statement of a conditional branch for deciding whether each of said plurality of variables and each of said plurality of constants are equal, and halting

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said program if each of said plurality of variables and each of said plurality of constants are not equal, and that inserts in said program said watermark verification code which, if said watermark or said watermark verification code is tampered, does not operate said program properly and which comprises same content regardless of said plurality of distribution destinations;

a second assignment expression embedding section that generates another function that outputs another constant such that a sum of said another constant and a sum of said plurality of constants is zero and embeds in said program an expression that assigns said another function to another variable; and

an addition section that generates and inserts as a verification code a code that adds a total value of the another variable and said sum of said plurality of variables to said decision statement of said conditional branching in said program such that said decision statement of said program of a decision branch is not affected if said watermark and watermark verification code are not tampered; and

said watermark extraction apparatus comprises:

a program input section that inputs a program in which the watermark insertion apparatus ~~according to claim 1~~ has inserted said watermark and said watermark verification code; and

a watermark detection section that extracts said watermark from said program and generates ID information that uniquely identifies said distribution destination based on said watermark;

~~wherein~~ a distribution destination is identified based on said generated said ID information in said watermark extraction apparatus.

8.   (original) The program illegal distribution prevention system according to claim 7, wherein said watermark insertion apparatus is provided at said distribution destination.

9.   (currently amended) A watermark insertion method wherein:

generating watermark that differs for each program distribution destination is inserted in said program and said watermark is used;

~~said program is prevented from operating correctly when said watermark is tampered with; and~~

~~watermark verification code that is identical regardless of said distribution destination is inserted in said program~~

defining a plurality of functions that output a plurality of constants, respectively, from said watermark and embedding in said program a plurality of expressions that assign said plurality of functions to a plurality of variables, respectively;

setting as a watermark verification code a decision statement of a conditional branch for deciding whether each of said plurality of variables and each of said plurality of constants are equal, and halting said program if each of said plurality of variables and each of said plurality of constants are not equal, and inserting in said program a watermark verification code which, if said watermark or said watermark verification code is tampered, does not operate said program properly and which comprises same content regardless of said plurality of distributions destinations;

generating another function that outputs another constant such that a sum of said another constant and a sum of said plurality of constants is zero and embedding in said program an expression that assigns said another function to another variable; and

generating and inserting as a verification code a code that adds a total value of said another variable and said sum of said plurality of variables to said decision statement of said conditional branching in said program such that said decision statement of said program of a decision branch is not affected if said watermark and watermark verification code are not tampered.

10.   (currently amended) A watermark insertion method according to claim 9, comprising:

inserting in [[a]] said program said watermark that differs for each program distribution destination; and

converting a ~~part other than a location at which said watermark is inserted~~ periphery of an insertion location of said watermark or said entire program while maintaining specifications of said program.

11.   (cancelled)

12.   (currently amended) A watermark insertion apparatus according to claim 1, comprising:

a watermark insertion section that inserts in [[a]] said program said watermark that differs for each program distribution destination; and

a conversion section that converts a part other than a location at which said watermark is inserted while maintaining specifications of said program.

13.   (original) The watermark insertion apparatus according to claim 12, wherein said conversion section inserts an execution code pair that does not affect specifications in a part other than a location at which said watermark is inserted.

14.   (original) The watermark insertion apparatus according to claim 12, wherein identification information is stored that indicates an insertion location of said watermark.

15.   (original) The watermark insertion apparatus according to claim 14, wherein said identification information is a method name or line number.

16.   (original) The watermark insertion apparatus according to claim 12, wherein said conversion section performs obfuscating so that specifications are not affected in a part other than a location at which said watermark is inserted.

17.   (original) A watermark extraction apparatus comprising:

a program input section that inputs a program in which the watermark insertion apparatus ~~according to claim 12 has inserted said watermark~~ comprises:

a watermark insertion section that inserts in a program watermark that differs for each of a plurality of distribution destinations of said program;

a first assignment expression embedding section that defines a plurality of functions that output a plurality of predetermined constants, respectively, from said watermark and embeds in said program a plurality of expressions that assign said plurality of functions to a plurality of variables, respectively;

a code insertion section that sets as a watermark verification code a decision statement of a conditional branch for deciding whether each of said plurality of variables and each of said plurality of constants are equal, and halting said program if each of a plurality of variables are not equal, and that inserts in said program said watermark verification code which, if said watermark or said watermark verification code is tampered, does not operate said program properly and which comprises same content regardless of said plurality of distribution destinations;

a second assignment expression embedding section that generates another function that outputs another constant such that a sum of said another constant and a sum of said plurality of constants is zero .and embeds in said program an expression that assigns said another function to another variable;

an addition section that generates and inserts and inserts as a verification code a code that adds a total value of said another variable and said sum of said plurality of

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variables to said decision statement of said conditional branching in said program such that said decision statement of said program of a decision branch is not affected if said watermark and watermark verification code are not tampered

a watermark insertion section that inserts in said program said watermark that differs for each program distribution destination; and

a conversion section that converts a part other than a location at which said watermark is inserted while maintaining specifications of said program; and

a watermark detection section that extracts said watermark from said program; wherein a distribution destination is identified based on extracted said watermark.

18.   (currently amended) A watermark extraction apparatus comprising:

a program input section that inputs a program in which the watermark insertion apparatus ~~according to claim 15 has inserted said watermark~~ comprises:

a watermark insertion section that inserts in a program watermark that differs for each of a plurality of distribution destinations of said program;

a first assignment expression embedding section that defines a plurality of functions that output a plurality of predetermined constants, respectively, from said watermark and embeds in said program a plurality of expressions that assign said plurality of functions to a plurality of variables, respectively;

a code insertion section that sets as a watermark verification code a decision statement of a conditional branch for deciding whether each of said plurality of variables and each of said plurality of constants are equal, and halting said program if each of a plurality of variables are not equal, and that inserts in said program said watermark verification code which, if said watermark or said watermark verification code is

tampered, does not operate said program properly and which comprises same content regardless of said plurality of distribution destinations;

a second assignment expression embedding section that generates another function that outputs another constant such that a sum of said another constant and a sum of said plurality of constants is zero .and embeds in said program an expression that assigns said another function to another variable;

an addition section that generates and inserts and inserts as a verification code a code that adds a total value of said another variable and said sum of said plurality of variables to said decision statement of said conditional branching in said program such that said decision statement of said program of a decision branch is not affected if said watermark and watermark verification code are not tampered

a watermark insertion section that inserts in said program said watermark that differs for each program distribution destination; and

a conversion section that converts a part other than a location at which said watermark is inserted while maintaining specifications of said program; and

a watermark detection section that obtains said identification information, identifies a watermark insertion location from said identification information, and extracts said watermark from only identified said watermark insertion location; wherein a distribution destination is identified based on extracted said watermark, and wherein said identification information is a method name or line number.

19.   (cancelled)

20.   (original) The watermark insertion apparatus according to claim 12, wherein said conversion section converts a sequence of a part that is a part other than a location at which said

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watermark is inserted and is a part that does not affect specifications even if said sequence is switched around.

21. (original) The watermark insertion apparatus according to claim 20, wherein historical information on a part that does not affect said specifications is held, and using said historical information, conversion of a part that does not affect said specifications is made to differ for each distribution destination.